REMARKS/ARGUMENTS

Claims 51, 57, 62, 68, 73-76, 78-85, and 87-90 were previously pending in the application. Claims 57, 68, 74, and 83 are canceled; claims 51, 62, 73, and 82 are amended; and new claims 91-96 are added herein. Assuming the entry of this amendment, claims 51, 62, 73, 75-76, 78-82, 84-85, and 87-96 are now pending in the application. The Applicant hereby requests further examination and reconsideration of the application in view of the foregoing amendments and these remarks.

Claim Rejections - 35 USC 112

On page 3 of the office action, the Examiner rejected claims 51 and 57 under 35 U.S.C. 112, second paragraph, as being indefinite. In particular, the Examiner stated that apparatus claim 51 "does not define any structure." In response, the Applicant submits that currently amended claim 51 does define structure. As such, the Applicant submits that the rejections of claims 51 and 57 under 35 U.S.C. 112, second paragraph, have been overcome.

Claim Rejections - 35 USC 102

On page 4, the Examiner rejected claims 51, 57, 62, and 68 under 35 U.S.C. 102(e) as being anticipated by Jenkins. Claims 51 and 62 have been amended to include the features of previously pending (now canceled) claims 57 and 68, respectively. Currently amended claim 51, for example, is directed to a lineariser comprising a divider adapted to divide a raw signal into a plurality of parallel components having different frequencies or bands of frequencies.

In rejecting claim 57, the Examiner stated on page 4 that Jenkins "discloses a divider for dividing the raw signal into a number components having different frequencies or bands of frequencies," citing the Abstract, Figs. 1 and 4, and column 3, lines 43-58, of Jenkins. The Examiner cited the same teachings in Jenkins to reject claim 68. The Applicant respectfully submits that the Examiner mischaracterized the teachings in Jenkins is rejecting previously pending claims 57 and 68.

In particular, nowhere does Jenkins teach or even suggest a divider that divides a raw signal into a plurality of components having different frequencies or bands of frequencies. Jenkins' Abstract does not say anything about a divider or dividing a signal into a plurality of components having different frequencies or bands of frequencies. Neither Jenkins' Fig. 1 nor Fig. 4 show such a divider. Nor does column 3, lines 43-58, of Jenkins teach such a divider. In Jenkins, a single frequency is determined for each sample of the input signal. See, e.g., column 3, lines 43-44; column 3, lines 59-62; column 4, lines 11-15. Jenkins does not teach or even suggest a divider that divides a raw signal into a plurality of components having different frequencies or bands of frequencies.

In fact, on page 6, the Examiner admitted that "Jenkins doesn't specifically disclose dividing a raw signal into a plurality of raw components, each raw component having amplitude and each raw component corresponding to a different frequency or band of frequencies; and generating a modified component for each raw component based on the amplitude of the raw component."

To further distinguish over the serial processing of the data stream taught in Jenkins, currently amended claims 51 and 62 explicitly recite that the divider divides the raw signal into a plurality of parallel components having different frequencies or bands of frequencies. Support for this feature is shown in each of Figs. 2, 4, 6, and 7.

In view of the foregoing, the Applicant submits that currently amended claims 51 and 62 are allowable over Jenkins. As such, the Applicant submits that the rejections of claims 51 and 62 under 35 U.S.C. 102(e) have been overcome.

Claim Rejections - 35 U.S.C. 103

On page 5, the Examiner rejected claims 73-76 and 82-85 under 35 U.S.C. 103(a) as being unpatentable over Jenkins in view of Chandran. For the following reasons, the Applicant submits that the rejections of at least previously pending (now canceled) claims 74 and 83 were based on an improper combination of references.

Claims 73 and 82 have been amended to recite the features recited in previously pending claims 74 and 83, respectively. Currently amended claim 73, for example, is directed to a method for reducing distortion in an output signal generated by signal handling equipment, where the signal handling equipment is an amplifier adapted to amplify the modified signal, and the modified signal is generated by applying pre-distortion to the raw signal, wherein the pre-distortion reduces the distortion in the output signal generated by the amplifier.

Claims 73 and 82 have also been amended to explicitly recite that the raw signal is divided into a plurality of parallel raw components, analogous to the corresponding amendments to claims 51 and 62.

In rejecting previously pending claims 73 and 82, the Examiner admitted, on page 6, that "Jenkins doesn't specifically disclose dividing a raw signal into a plurality of raw components, each raw component having amplitude and each raw component corresponding to a different frequency or band of frequencies; and generating a modified component for each raw component based on the amplitude of the raw component." Rather, the Examiner cited Chandran as teaching the features missing from Jenkins. In particular, according to the Examiner, "Chandran discloses a method and apparatus for dividing a signal into a plurality of components, each component having amplitude and each component corresponding to a different frequency or band of frequencies," citing block 104 in Fig. 1 and column 1, lines 29-64, of Jenkins.

On page 7, the Examiner justifies the rejections of claims 74 and 83 based on the combination of teachings from Jenkins and Chandran by stating that "Jenkins and Chandran are analogous art because they are from the similar problem solving area of reducing distortion of a signal. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate in the predistortion system disclosed by Jenkins the frequency divider and combiner disclosed by Chandran. The suggestion/motivation for doing so would have been to reduce distortion in single channels in multiple channel systems (Chandran abstract and column 1 lines 15-18). Therefore, it would have been obvious to incorporate Jenkins with Chandran to obtain the invention as specified in claims 74 and 83." For the following reasons, the Applicant submits that the Examiner's arguments are not proper as to previously pending claims 74 and 83 and therefore as to currently amended claims 73 and 82, which now include the features of previously pending claims 74 and 83, respectively. Rather, the Applicant submits that it is not proper to combine the teachings of Jenkins and Chandran to reject currently amended claims 73 and 82.

The teachings in Jenkins are related to techniques for reducing distortion generated by an amplifier by pre-distorting the input signal prior to application to the amplifier such that the pre-distortion at least partially compensates for the distortion produced by the amplifier in order to linearize the amplifier's response. See, e.g., Abstract. In particular, as explicitly taught in column 1, lines 8-14, the amplifier in Jenkins is used in the "transmission of broadcast television signals," where the input

signal are precorrected "before they are inputted to a non-linear amplifying device for transmission to an antenna for propagation." The entire discussion in Jenkins is limited to the context of amplifiers for such television transmitters. See, e.g., column 1, lines 17-18; column 1, lines 21-22; column 1, lines 58-59; column 2, line 35; and column 3, lines 55-56. Thus, the teachings in Jenkins are related to techniques for linearizing a non-linear amplifier in a transmitter by predistorting the input signals prior to being applied to the amplifier and prior to transmission of the resulting amplified signal.

The teachings in Chandran, on the other hand, are related to techniques implemented in a receiver for adaptively suppressing noise in a received speech communication signal. See, e.g., column 1, lines 15-16; column 2, lines 9-12; and column 4, lines 10-12. Chandran explicitly defines the types of noise to be suppressed as "any undesirable signal present in the speech signal including: 1) environmental background noise; 2) echo such as due to acoustic reflections or electrical reflections in hybrids: 3) mechanical and/or electrical noise added due to specific hardware such as tape hiss in a speech playback system; and 3) non-linearities due to, for example, signal clipping or quantization by speech compression." See column 1, lines 40-47. None of these different types of noise corresponds to the distortion generated by an amplifier. Moreover, none of the noise suppression techniques taught in Chandran have anything to do with the pre-distortion of an input signal prior to being applied to a noise-generating device. In Chandran, the noise suppression technique are all applied to a signal after the noise has already been added.

Simply put, a person of ordinary skill in the art of pre-distorting an input signal prior to being applied to a noise-generating amplifier in a transmitter (as taught in Jenkins) would not look to references, such as Chandran, whose teachings are related to techniques implemented in a receiver to reduce noise in a received speech communication signal, where that noise has nothing to do with distortion generated by an amplifier located in a transmitter, and the noise suppression processing is applied after the fact to an already noisy signal. As such, the Applicant respectfully submits that it was improper for the Examiner to combine the disparate teachings in Jenkins and Chandran to reject previously pending claims 74 and 83.

For all these reasons, the Applicant submits that currently amended claims 73 and 82 are allowable over Jenkins and Chandran. Since claims 75-76, 78-81, 84-85, and 87-90 depend variously from claims 73 and 82, it is further submitted that those claims are also allowable over Jenkins and Chandran. The Applicant submits therefore that the rejections of claims under Section 103(a) have been overcome.

Allowable Subject Matter and New Claims 91-96

On page 10, the Examiner objected to claims 80-81 and 89-90 as being dependent upon a rejected base claim, but indicated that those claims would be allowable if rewritten in independent form.

Support for new claims 91-96 is found as follows:

New Claim	Support
91	Claims 73 and 78-80
92	Claim 74
93	Claim 81
94	Claims 82 and 87-89
95	Claim 83
96	Claim 90

New claim 91 is equivalent to previously pending claim 80 rewritten in independent form. Since the Examiner stated that previously pending claim 80 would be allowable if rewritten in independent form, the Applicant submits that new claim 91 is allowable. Since new claims 92-93 depend from claim 91, it is further submitted that those claims are also allowable.

New claim 94 is equivalent to previously pending claim 89 rewritten in independent form. Since the Examiner stated that previously pending claim 89 would be allowable if rewritten in independent form, the Applicant submits that new claim 94 is allowable. Since new claims 95-96 depend from claim 94, it is further submitted that those claims are also allowable.

In view of the above amendments and remarks, the Applicant believes that the now-pending claims are in condition for allowance. Therefore, the Applicant believes that the entire application is now in condition for allowance, and early and favorable action is respectfully solicited.

Respectfully submitted,

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